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United States
Environmental Protection
Agency

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December 3, 1991

Reply To
Attn Of: HW-074

CERTIFIED MAIL- RETURN RECEIPT REQUESTED

Ronald D. Izatt, Program Manager
Office of Environmental Assurance
Permits and Policy
Department of Energy
Richland Operations Office
P.O. Box 550 (A5-19)
Richland, Washington 99352

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 13
To Sue Price	From Cliff Clark
Co. WHC	Co.
Dept.	Phone # 6-9333
Fax # 6-6476	Fax # 6-7818

Re: NOTICE OF DEFICIENCY AND WARNING LETTER
Environmental Protection Agency ID. No. WA7890008967

Dear Mr. Izatt:

The U.S. Environmental Protection Agency (EPA) Region 10 has reviewed your initial August 1991 notification for seeking a Research, Development, and Demonstration (RD&D) Permit for the waste water pilot plant operations. EPA believes that the proposed waste water treatment system in tailoring existing technologies for pH adjustment, organic removal, inorganic removal, secondary waste concentration, and suspended solids removal, is eligible for a RD&D Permit under 40 CFR § 270.65 in accordance with the requirements in OSWER Policy Directive #9527.00-1A, "Guidance Manual for Research, Development and Demonstration Permits under 40 CFR Section 270.65", EPA/530-SW-86-008, July 1986. It is our understanding that the initial pilot plant testing activities are required to support process design and delisting of the waste water stream of the 242-A Evaporator/PUREX Plant Condensate Treatment Facility.

EPA has, therefore, completed a review of the 31 October 1991, Resource Conservation and Recovery Act (RCRA) Waste Water Pilot Plant Research, Development, and Demonstration (RD&D) Permit Application, which was submitted in accordance with 40 CFR § 270.65.

The enclosed Notice of Deficiency (NOD) is based on a comprehensive technical review of the application and the information requirements found in 40 CFR Part 270. Some of the major components of a complete application were not provided, and are substantially incomplete, such as the engineering description, preparedness and prevention plan, waste analysis plan, and operating controls. The RCRA hazardous waste regulations require significantly more design and operating details than were presented in the application.

WASTE WATER PILOT PLANT
RESEARCH, DEVELOPMENT, AND DEMONSTRATION PERMIT
OCTOBER 1991
NOTICE OF DEFICIENCY

A. DESIGN AND OPERATION OF FACILITY: SECTION 1.0: 40 CFR § 264

1. Introduction: 40 CFR § 264.31

   The implication is made that only the 242-A evaporator condensate will be treated in this waste water treatment facility. The introduction must include all waste waters that will be treated at this facility.

2. The waste codes in this section indicate that only F003 and F005 as well as WT02 designate the waste. This should be clarified to apply only to the 242-A Evaporator waste stream. The designation of the other waste streams should also be discussed in this section.

B. DEMONSTRATION PLAN: SECTION 2.0: 40 CFR § 270.65

1. Test Procedures/Plans: 40 CFR § 270.65

   The frequency of submittal of the Test Procedures and the Test Plans/Reports should be clarified in Section 2.1.1 and 2.1.2. These plans and reports are to be submitted to EPA and Ecology for review. There is no schedule for detailed test plans and when they will be available for EPA and Ecology review. The Test Reports should be submitted on a quarterly basis. The outline provided of the test plan report must be expanded to assure that sufficient information will be provided with these reports to at a minimum document the following:

   a. Treatment efficiency achieved

   b. Calculations/evaluations performed to determine the treatment efficiency

   c. Sampling and analytical methods and QA/QC procedures followed for the testing, including identification and discussion of any deviations from the established methods.

   d. Complete QA/QC report of all analysis, including raw data sheets.

   e. Copies of monitoring log/records of critical operating parameters.

f. Copies of records documenting instrument calibration.

2. Treatment Technologies: 40 CFR § 270.65

Table 2-1 on Treatment Technologies should be clarified. All technologies whether primary or secondary or tertiary should be specified as treatment technologies which will be included in this RD&D Permit. If additional technologies or testing locations, other than at the 1706-KE Building or at the LERF, are required at a later date this will require an additional RD&D Permit or at a minimum a Class 3 permit modification to include them. Therefore all technologies, testing locations, and applicable information should be included in the RD&D permit application prior to EPA issuance. Additional technologies unless specifically identified in the RD&D Permit will not be allowed to be developed or demonstrated. All technologies identified must be addressed in Section 4.0, including at a minimum the type of information (e.g., equipment description, critical parameters and safety features, piping and instrumentation diagram) and level of detail provided for the technologies currently identified in Section 4.0. If it is likely that DOE may want to include UV system(s) which incorporate ozone into the treatment scheme, DOE needs to address this in Section 4.0, as this addition to the treatment scheme would result in significant additional critical operating parameters and equipment.

C. GENERAL WASTE ANALYSIS: SECTION 3.0: 40 CFR § 264

1. Off-site Waste: 40 CFR §§ 264.13(a)(4) and (b)(5)

There is no mention of off-site wastes. If no off-site wastes are to be treated this should be stated in section 3.1.1 Description of Waste Streams.

2. Operating Envelope: 40 CFR § 264.13(b)(1)

Table 3-1 The Operating Envelope should address all critical parameters. This should address all systems including the carbon/activated charcoal filter and the HEPA filter identifying the other constituents which may utilize filter capacity. Each technology train (i.e., including the intermediate storage tanks, test equipment, and tank trailer loading and unloading system) should be comprehensively evaluated to identify constituents which could be present in the air stream from these technology trains into the filters which

either utilize capacity in the carbon/activated charcoal filter or the HEPA filters, or constituents which could effectively make apparent capacity in the filters unavailable for use (e.g., moisture, particulates). Simply designating on page 4-5 that ambient air will be bled into the system ahead of the charcoal filter to prevent plugging by moisture does not adequately address the concern for potential plugging by moisture. Specifics on the rate of introduction of ambient air, expected maximum saturation levels of ambient air, expected moisture levels from air stream from waste processes, and calculations to interrelate this information to document that plugging will not occur needs to be included in the application.

The presentation of the Operating Envelope should include a discussion of all the critical operating parameters (e.g., temperature, pressure, corrosion) and to the extent applicable, tie these parameters back to waste physical and/or chemical properties (e.g., pH, volatility, etc.) or at a minimum if not applicable to physical and/or chemical properties to tie these parameters back to the operating controls on Table 4-3, with an extensive discussion of basis for the non-applicability.

3. Analytical Methods: 40 CFR § 264.13(b)(2)

Table 3-2: Waste Analysis Plan Analytical Methods: This table should also identify the preparation methods and extraction methods for the waste water streams that will be treated in the waste water treatment plant.

4. Methods to Sample Wastes: 40 CFR § 264.13(b)(3)

Tables 3-2 and 3-3 should specify the radionuclide Hanford Site "onsite" methods listed.

D. SECTION 4.0 PROCESS INFORMATION: 40 CFR §§ 264.13(b)(6) and 270.65

1. Waste Characterization: 40 CFR § 264.13(b)(6)

This section must address the waste codes for the other waste streams identified in Section 1.0 Introduction.

2. Critical Parameters: 40 CFR § 270.65

a. Figures 4-1 through 4-19 should include both the range of the specific parameter being measured (e.g. temperature, pressure, etc.) and the set point/range which is established for that

parameter. In addition, the pH limitation of the specific unit should be identified (i.e. the specific limit which would be unsafe should be specified). The Table 2-1 needs to be tied into this Section regarding primary and secondary technologies.

b. Information documenting the adequacy of HEPA filter system for each technology train (i.e., including the intermediate storage tanks, test equipment, and tank trailer loading and unloading system) needs to be included in the application. The information documenting the adequacy of the activated charcoal/carbon filtration system must be expanded to address each technology train (i.e., including the intermediate storage tanks, test equipment, and tank trailer loading and unloading system) and other contaminants which may use up adsorptive capacity as designated in comment 2, under Section C, and must include an evaluation of worst case compound(s), with respect to adsorption efficiency (e.g., compounds with low carbon/activated charcoal adsorption efficiency such as vinyl chloride, methylene chloride, etc.) in any waste feed to be handled during the RD&D, not just the 242-A evaporator condensate. These worst case compound(s) need to be included under the operating envelope. A surrogate monitoring approach should be included for monitoring premature plugging of the carbon/activated charcoal filter system (e.g., pressure across the system).

c. Under the Critical Parameters and Safety Features subsection for technologies addressed under Section 4.0, a backup to the check-valves used for preventing introduction of water into the acid feed tank and hydrogen peroxide lines should be provided.

3. <u>Process Flow Diagrams: 40 CFR § 270.65</u>

The process diagrams should include the monitors of all the critical parameters and instrument legends. These monitors and all alarms/sensors associated with the monitors should be assigned an identification code/number which should be referred to on Table 4-3. Tables 4-3 and 4-4 must also address the critical parameters for operation of the tank trailer load/unload system and the intermediate storage tanks. In addition the calibration of this equipment to the manufacture's specifications should also be addressed. A calibration log should also be maintained at the facility. The monitor specifications on Table 4-4 must

indicate in all cases the extent of full scale/full range so that it may be correlated with the acceptable levels/ranges specified on Table 4-3.

4. Spill Prevention and Containment: 40 CFR § 270.65

The catch pan footprint needs to address the spray potential of ruptured treatment units under pressure. The basis for the extent for the catch pan footprint needs to be provided. The footprint for the catch pans designated on page 4-3 (i.e., 1 foot greater in each horizontal dimension than the footprint of the equipment), is inconsistent with the length specified on Table 4-1 for the reverse osmosis unit (i.e., .5 foot greater). The RD&D application must document how the secondary containment system will address equipment which is ancillary to the primary test equipment such as pumps, valves, etc. The RD&D application needs to provide details on how the secondary containment and leak detection requirements of Section 264.193, referred to on page 4-23, are being met for the trailer (e.g, materials of construction for the berms, compatibility of containment construction materials with wastes, adequacy of constructed containment to withstand expected loading, etc.).

E. GENERAL INSPECTION REQUIREMENTS: SECTION 5.0: 40 CFR § 264.15

1. Inspection Schedule: 40 CFR § 264.15(b)

The schedules for inspecting monitoring equipment, safety, and emergency equipment, security devices, and operating and structural equipment that are vital to prevent, detect, correspond to environmental or human health hazards must be included in the permit application.

2. Items to be Inspected: 40 CFR § 264.15(b)(1)

This section must address the specific inspections which will be conducted on each item of operational equipment and address the maintenance, repair and replacement of equipment. The inspection should be conducted in accordance with and specify the manufacturers specification. The details of the type of readout/records (e.g., strip charts) to be collected and maintained in the operating record for the critical parameter monitoring equipment and the frequency of their collection must also be provided.

3. Types of problems for which each item is inspected: 40 CFR § 264.15(b)(3)

a. Inspection checklists must be included in the RD&D Permit Application.

b. A Preventative Maintenance Plan should be included in the RD&D Permit Application.

c. This Operational Readiness Review must be submitted after completion to EPA and Ecology to determine if the RD&D Permit needs to be updated/changed prior to issuance.

4. Inspection Frequency: 40 CFR § 264.15(b)(4)

The inspection frequency must be specified in the permit application for the inspection checklist.

F. CONTINGENCY PLAN: SECTION 6.0; 40 CFR §§ 270.14(b), 264 through 264.56)

1. Implementation of Plan: 40 CFR § 264.51

The contingency plan must stand on its own, no references to other portions of the permit application or other documents for information may be made unless they are separately attached to the contingency plan.

2. Contents of Plan: 40 CFR § 264.52

a. The specific information on the waste types, hazards, and chemicals which are present in the Waste Water Treatment Facility 1706-KE Building and the LERF Facility must be included in the contingency plan.

b. The specific building emergency plan for the Waste Water Treatment Facility 1706-KE and the LERF, Appendix F, must be specific to waste water treatment operations, addressing the actual waste types to be handled, specific types of emergencies which may occur (e.g., chemical reaction from water entering acid tanks, vessel rupture due to overpressure, etc.) and the types of emergency equipment on hand including decontamination solutions etc., specific shutdown procedures, identifying personnel protective equipment needed for the various potential waste water treatment technology demonstrations, and specific steps and materials for clean-up of emergency equipment.

APPENDIX A

CHECKLIST FOR RCRA RESEARCH, DEVELOPMENT AND DEMONSTRATION PERMITS

Facility Name _____
ID No. _____

CHECKLIST FOR RCRA RESEARCH, DEVELOPMENT AND DEMONSTRATION PERMITS*

		Provided (Y/N) or NA	Location	Comments
I	STANDARD CONDITIONS			
A	Effect of Permit (§§270.4, 270.30(g))			
B	Permit Actions (§270.30(f))			
C	Severability (§124.16(a))			
D	Duties and Requirements			
D-1	Duty to comply (§270.30(a))			
D-2	Duty to reapply (§§270.30(b), 270.10(h))			
D-3	Permit expiration (§270.51)			
D-4	Need to halt or reduce activity not a defense (§270.30(c))			
D-5	Duty to mitigate (§270.30(d))			
D-6	Proper operation and maintenance (§270.30(e))			
D-7	Duty to provide information (§§270.30(h), 264.74(a))			
D-8	Inspection and entry (§270.30(i))			
D-9	Monitoring and records (§§270.30(j), 270.30(j)(4))			
D-10	Reporting planned changes (§270.30(l)(1))			
D-11	Certification of construction or modification (§270.30(l)(2)(i))			
D-12	Anticipated noncompliance (§270.30(l)(2))			
D-13	Transfer of permits (§§270.30(l)(3), 270.40)			

Notes: Under the provisions of 40 CFR 270.65, R,D&D permits may be issued for a period up to one year. The Administrator may waive permit requirements, except those regarding financial responsibility and those related to public participation. Thus, the reviewer may expect to see a great deal of variation in R,D&D permits. If there are hazardous waste storage facilities associated with the experimental process units, they must be permitted in accordance with the requirements of 40 CFR Parts 270 and 264. Those permit conditions may be evaluated using Sections I through IV of the Permit Quality Protocol.

		(Y/N) or NA	Location	Comments
	[illegible] (§270.30(l)(9))			
	[illegible] reporting (§§270.30(l)(6), 264.56(d) and (j))			
D-16	Manifest discrepancy reports and unmanifested waste reports (§270.30(l)(7) and (8))			
D-17	Biennial report (§270.30(l)(9))			
D-18	Other noncompliance (§270.30(l)(10))			
D-19	Other information (§270.30(l)(11))			
E	Signatory Requirements (§§270.11, 270.30(k))			
F	Confidential information (§270.12)			
G	Documents to be Submitted Prior to Operation (§§270.32, 270.33)			
H	Documents to be Maintained at Facility Site			
H-1	Waste analysis plan (§264.13(b))			
H-2	Personnel training documents/records (§264.16(d))			
H-3	Contingency plan (264.53(a))			
H-4	Closure plan/post-closure plan (§264.112(a))			
H-5	Closure cost estimate/post-closure cost estimate (§264.142(d))			
H-6	Operating record (§264.73)			
H-7	Inspection schedule(s) (§264.15(b)).			
H-8	Other documents			

Facility Name _____
ID No. _____

CHECKLIST FOR RCRA RESEARCH, DEVELOPMENT AND DEMONSTRATION PERMITS*

		Provided (Y/N) or NA	Location	Comments
I	GENERAL FACILITY CONDITIONS			
A	Design and Operation of Facility (§264.31)			
B	Required Notices (§264.12)			
C	General Waste Analysis (§264.13)			
C-1	Parameters to be analyzed for in each waste (§264.13(b)(1))			
C-2	Analytical methods (§264.13(b)(2))			
C-3	Methods to sample wastes (§264.13(b)(3))			
C-4	Frequency of analysis (§264.13(b)(4))			
C-5	Wastes from off-site (§264.13(a)(4) and (b)(5))			
C-6	Waste characterization requirements for specific types of treatment and disposal (§264.13(b)(6))			
D	Security (§264.14)			
D-1	Description of barrier and means to control entry (or 24-hour surveillance system) (§264.14(b))			
D-2	Description of warning signs (§264.14(c))			
E	General Inspection Requirements* (§264.15)			
E-1	Inspection schedule (§264.15(b))			
E-2	Items to be inspected (§264.15(b)(1))			
E-3	Type of problems for which each item is inspected (§264.15(b)(3))			
E-4	Inspection frequency (§264.15(b)(4))			
F	Personnel Training (§264.16)			
F-1	Program director (§264.16(a)(2))			
F-2	Training program contents (§264.16(a)(3))			

		Provided (Y/N) or NA	Location	Comments
F-3	Frequency of training [§264.16(b) and (c)]			
G	General Requirements for Ignitable, Reactive, or Incompatible Waste [§264.17]			
G-1	Ignitable or reactive [§264.17(a)]			
G-2	Incompatibles [§264.17(b)]			
H	Location Standards [§§264.18, 270.14(b)(11)]			
H-1	Seismic considerations [§264.18(a)]			
H-2	Flood proofing description/drawings [§264.18(b)]			
H-3	Flood plan [§264.18(b)]			
I	Preparedness and Prevention			
I-1	Required equipment [§264.32]			
I-2	Testing and maintenance of equipment [§264.33]			
I-3	Access to communications or alarm system [§264.34]			
I-4	Required aisle space [§264.35]			
I-5	Arrangements with local authorities [§264.37]			
J	Contingency Plan			
J-1	Implementation of plan [§264.51]			
J-2	Copies of plan [§264.53]			
J-3	Amendments to plan [§264.54]			
J-4	Contents of contingency plan [§264.52]			
J-4a	response procedures [§264.52(a)]			
J-4b	coordination agreements [§264.52(c)]			
J-4c	emergency coordinators [§§264.52(d), 264.55]			
J-4d	emergency equipment [§264.52(e)]			

FAX FORM

DATE: 12/09/91

U. S. EPA REGION 10
HAZARDOUS WASTE DIVISION
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Seattle, WA 98101

To confirm your fax, call the person to whom your fax was sent

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CITY, STATE/REGION: RICHLAND, WA

FROM: DAN DUNCAN

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TOTAL PAGES: 19

COMMENTS: ATTACHED IS RDID NOD. A MEETING HAS BEEN SCHEDULED ON 18 DEC 1-3 PM IN CONF. ROOM 12-C TO DISCUSS THESE COMMENTS

For FAX information, call (206) 553-4141 for the FAX operator.
For general FAX information, call (206) 553-4672.